RMIT UNIVERSITY — School of Science, Engineering & Technology

Life Is On | Schneider Electric

ZERO PRODUCTION
ZERO CONSUMTION
GEN-AI DIAGNOSTIC

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Problem Statement

- Lack of insight into energy and compressed air consumption and root causes of downtime
- High energy consumption with limited equipment control
- Time-consuming error diagnostics on machines

Objective

- Continuous monitoring of 6 machines performance, including downtime Pareto, alarm frequency, and machine downtime details
- Continuous monitoring of energy, compressed air, and production performance in 6 machines
- Improving 6 machines to mitigate energy and air consumption

Methodology

Monitoring Systems

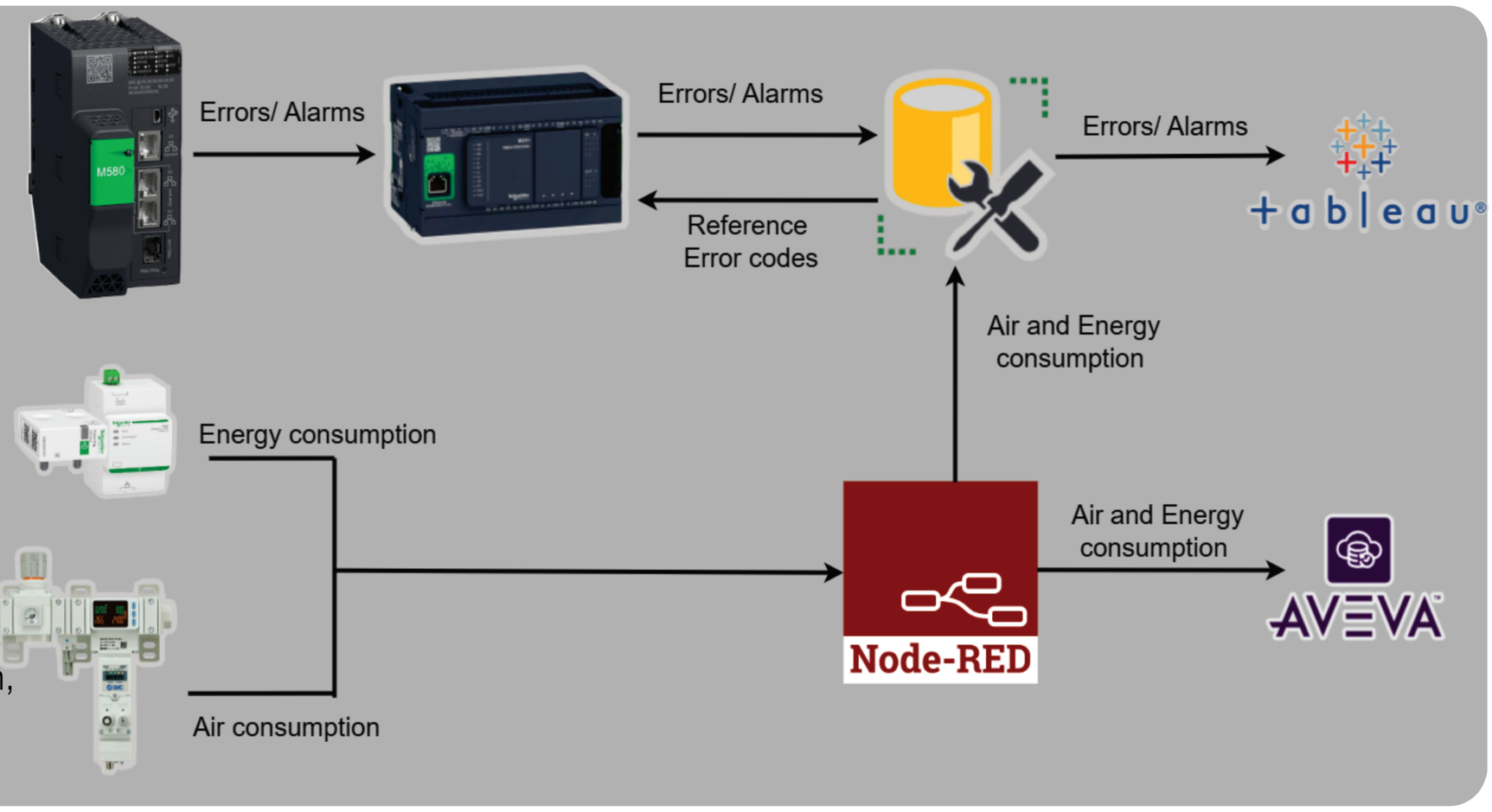
- Installing sensors and PLC gateways
- Integrating Node-RED and PLC gateways to store data in SQL and AVEVA
- Visualizing data with Tableau

Energy and Air Optimization

- Identifying high energy equipment
- Implementing control logic in non-production periods
- Reducing the air flow to cut waste

Equipment Mapping

- Matching errors with devices' position, part number, brand and type



Result

- Energy, compressed air consumption, and machine error data are recorded with high stability
- Reducing FS-AAM-02 energy consumption by 7%
- Reducing total compressed air consumption by 3% across six machines
- Creating a foundation for predictive maintenance and Gen-AI-driven diagnostics